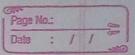
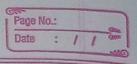
1) Theger Type - This type stores positive or regative values. vale num: Int = 7 Floating Point Type - This type stores numbers with Gractional point. Thore are a alegariles based on number of decimal digit apacity. Flood & Double. var num1: Double = 7.77 Booloan Type - This type stores the value in Pt 28 false. var st: Boologn = true



Strings type- This type of data stokes the segments of character values. The data Re worlder in " var str: String = "student" 2) Data Classes- It is a simple class which is furtherality. "data" Koy word is used to declare a class as data class. For Locasing a data class must contain at loost one premary constructor with property argument Data class Of tornally contains following furction D 09428 () : Boolean 2) hash (ode (): Int 3) to Staing(): Staing () frompano) (> 5) (opy() Compilor automatically dotous this func?). Opta class laptop (var brand: String, vor price. Int. 2 println ("laptop"

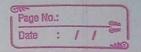


fun main () war x = laptop ("HP", 2000) prentla(x)
var y = laptop ("Dell", 2500)
prentla(y) pountle (Z) //copyfunc. println (20. equals (y)) // equals func^ 3) Null Safety is a photodure to element the It's is of nell reference from the source code. Kotlen compeler throws Null Pointer Exception Emmediately if it founds the nell argument without solo cuting other statements Nullable Types: They are doclared by publing 7 after the data type of the yarrabe. var str: String? = "Student" Sty = null / 'will work also now. Print (H) Print nullif we printed Non Nullable Types - Here the compiler will thorow an evolut.

var Stale = "Student"

Stale = null " compilor throws error print (Stor) boranse ve have not used?

	Late : / /
	Tochock for null reference if an boused.
	1907 lin's if emprossion is used for chocking.
	the nell condition and scotions value.
	0 0 0
	stin main ()
	1/00, 010 0100
	Var 8tor: Storing? = null Politin (8tor)
	420000 (849)
	Var 11 = 9f (atr 1 = null) {
	Var 11 = PF (3+91) = null) { St91-longth } llso {-1}
	Pertin (II)
	5
	nul!
	THE REPORT OF THE PARTY OF THE
4	Safe Call Operator - Kotlin has safe call
7	anography (2) - hohich executes the line.
	of cop only when the specific stepesconce holds.
	a non-null value.
0	It moons that it will proceed ahood a lover cuto
	It moans that it will photoad ahoad and enderedo only and only if it (the Hoftence) is not null if value is null it will derectly restormall without
	Whate use lines of code were want to execute;
10ml	it will exocute only is own Hoferonce is any
	not null.



Elvis Operator - Kottin has elvis operator
(?:). It is used to restour the not null
include even the empression or response is
null. It is used to check the null safety of
values.

- If we have a reference that holds null then using eluis operator it can retain a nonnell value or it will return whatevor uglue we assign it manually.
- Not Null Assortion Operator : In Potlin, not null assertion operator is used when we are cortain that a variable or empression is not null. It converts are value of nullable type to a non null type and throws 'Kottin Null Pointer Exception' if the value is actually null.
- · If the value is not null it will work as per the singular manner but if the value is null it will their
- · We should use this operator only when use are absolutely sure that the value is not rull and we constructed it as a non-nullable type.
- · Instand of wing this operator it is botter to we the alternatives in Safe all (?.) and clus (?:) operators.

Aun main () val sta: Staling? = nell Phintla (str. longth) Phintln (SH1? longth) // sate call vale value 1 = S+9(?: "NA" // elus Prentla Caluar) val value 2 = str !!. length // Not Null afferrion plantla (value 2) Output //as safe call sotions nell null Melvis agelan NA to our workable Trapper occurs which's Hullfantor Exception and further execution Stops. Compiler throws errol.

	Page No.: Date : / /
5)	Constructor is a function without name which is used to initialize objects of class. Those are 2 types: Primary. Socondorus.
	age or issay
→	Permany constituctor is a part of classhoader It can take parameters and is defined after Classname using constituctor Keywoord. Coptions)
	class abc construction (n. string="student")
	var str. Stringen println (n)
	fun main()
	2 var n=abc("dev")
	Scrondary Construction is defined inside the class and defining it with logic which allows for more florible object deading.
2)(class abo constitution (n. String)
	var stri : String = "" var q: Int = 8
	conductor (a: Int, star Stary); this (star)
	this, a = a
	2 this · Storl = Storl

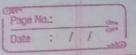
fun show() 7 Printer ("\$ Storl and \$ a") fun magn) Var x = abc (17, "shyam") 1 1. Show(6/ Extension function - It provides us with a facility to add mothods to a class without inhouting a class or using extenling it. class sample f var skills: storg = "", fun show () 2 99/2ntln (5K9/18) fun sample. plus (com: sample): sample var v2 = sample () V2. SKElls = this. SKElls +" "+ VI. SKElle Jetwa V2

Extension function enhances thereis lity and extending functionality of classes to Ptheoretical Totals fun male () var s1= sample () SI. SKELLS = "Kotten" prentln(SI.SKElls) var 52 - Sample () S2-SKELLS - "Paua" Prentin (52.5K:118) Var 33= SI. phy (S2) phindle (S3. SKP1(8) Companion Object - It returns an object without even droating an object of instance of class. when de want to use an object with out deating one we can use companion object. If I declated enside the class. To call it we have to use dall name : function name ()

It works semiliar to state chique but to access actual proporties of Static up read to write a Jun Static to make Practually static. Run show ()

Printin ('1 Mello") public class sample public étatic void main (Stowing abgs) used for: 1) Factorey Dosign Patter 2) EnCapsubation

8) In Kottin, when is used to access the finationality of switch in four. A cortoer block of bode well be executed when some condition is fulfilled. One by one the target is natched until found and ternengles after the natch and enetethe block of cools. It can be used as a statement and used as an expression. fun mals () vale n: Int = 2 when (n) 1 -> pala (" One") 2 -> PLENT ("Two")
3 -> PLENT ("Two") 4 -> prient ("fow") 2 else > print ("Invalid") fun main () var n: Int = 2 vorstr = when (n) of 2 -> " twoo"
3 -> " twice" else > " " " " " " " " Print (Str)



9) D'Kotlen is way more concise than fava 2) Own cale bornes easler to magness. Some features for code conciseross, data class type Enterface. Kotten requêres less code to achilous some Auctionality 3) Nullsafety - Kotten has built in Mullsafety Ento type system, helping to aword the common nullpointer exception by making mulas rellable and non rullable types coupling 4) Enlargion function - addling func. 1 to enlething classes with new functionality without modifying thair source code, 5) Inmulability - Encowagement of Enmulable data structures val - fromutable variables 6) functional programming features -Migher order functions and lambdas an load to more expressive and concise codo. 20) Recursion- Function allers itself to solve problem until the termination/ base condition is met. A mapar problem is broken into smaller sub phoblems

fun factorial hum: Int funmain() restore factorial (n roton nun * factoreland Tato Rocursion - In some ages, recursion as load to doep full stack phoblem and stack overflow issues. The all to sub problem continues and all the alculations are En perdeng state. So to avoid that we have to emplicatly shown compiler to use tall recurrence concept whore the calculation is done smultanopully and not in perdingtof works for even ladger expede. tablice of fact (num. Big Integer, Hol: Big Integer)

"If (num = = Big Integer. ZERO) : Big Integer

Toduum Res Redwon fact (nun- Plg Intoger. ONE, nun x hos) tun magn var num = Blg Integer (5")
prent (fact (num, Beg Intoges ONE))

